

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number
WO 2005/087658 A1

(51) International Patent Classification⁷: C01B 13/11,
13/10

(74) Agent: RICHES, MCKENZIE & HERBERT LLP; 2
Bloor Street East, Suite 1800, Toronto, Ontario M4W 3J5
(CA).

(21) International Application Number:
PCT/CA2005/000340

(22) International Filing Date: 3 March 2005 (03.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,461,223 16 March 2004 (16.03.2004) CA

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

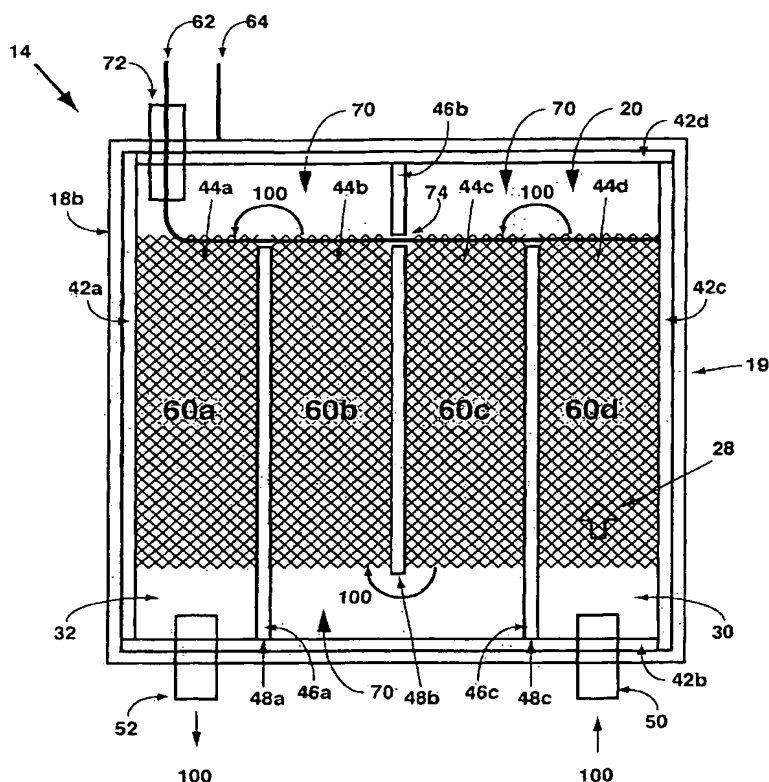
(71) Applicants and

(72) Inventors: PHILLIPS, Stanley [CA/CA]; 24 Devondale Street, Courtice, Ontario L1E 1S1 (CA). PHILLIPS, Shirley [CA/CA]; 24 Devondale Street, Courtice, Ontario L1E 1S1 (CA). PHILLIPS, Andrew [CA/CA]; 5 Glenabbey Drive, Courtice, Ontario L1E 1B5 (CA).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: APPARATUS FOR GENERATING OZONE AND/OR O₃ USING A HIGH ENERGY PLASMA DISCHARGE



(57) Abstract: An electro chemical conversion cell that can break down certain gasses to provide ozone and monovalent oxygen from a supplied volume of a suitable O₂-containing gas. The conversion cell is provided with at least one metal mesh electrode within a generator reaction chamber, and a power supply which is adapted to supply a high alternating electric current voltage to at least partially break-down O₂ in the input gas to yield ozone. A fluid flow passage extends through the reaction chamber as a generally elongated passage through the reaction cavity. The fluid flow passage extends from an upstream end, where the O₂-containing gas is initially supplied into the housing, to a downstream end where treated gas either flows outwardly therefrom under pressure or is evacuated from the housing. In a simplified construction, the fluid flow passage is delineated by a series of electrically insulating plates and/or spacers which are used to partition the reaction cavity.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

— with amended claims

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.